Literature Briefs

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Briefs were submitted by Drs. C. M. Ballinger, N. Bergman, D. R. Buechel, R. B. Boettner, R. B. Clark, J. Eckenhoff, J. Jacoby, R. L. Klein, W. Mannheimer, F. C. McPartland, D. Morrow, A. Patterson, R. E. Ponath, J. W. Pender, A. D. Randall, L. J. Saidman, P. Sechzer, A. D. Sessler, C. Wilkinson. Briefs appearing elsewhere in this issue are part of this column.

Circulation

PULMONARY EMBOLISM Pulmonary venous air embolism continues to be a major hazard in thoracic surgery and trauma. Positive-pressure breathing, especially with excessively high pressures for hyperinflation, may produce a pressure gradient favorable for the occurrence of air embolism. Under open thoracotomy, the usual positive pressure ventilation of 10 to 20 mm. of mercury may pose little hazard of air embolism because of the concomitant increase in the pulmonary venous pressure. However, applications of as high as 40 mm. of mercury positive pressure to hyperventilate the lungs increases the pressure gradient between the bronchus and pulmonary veins. It is therefore worthwhile to take precautionary measures, such as temporarily occluding the pulmonary veins. (*Chiu, C., and others: Pulmonary Venous Air Embolism: A Hemodynamic Reappraisal, Surgery 61: 816 (May) 1967.*)

FOOT BLOOD PRESSURE A direct relation between blood pressure at the brachial pulse and ankle pulses has been demonstrated. By application of a standard blood pressure cuff applied with its distal edge just above the malleoli, blood pressures were measured by ascultation of the posterior tibial or dorsalis pedis artery. The average mean foot blood pressure was less than the brachial by only 1.4 mm. of mercury with a range of +20 and −40 mm. of mercury. The average mean popliteal blood pressure was more than the brachial artery by 8.4 mm. of mercury with a range of −12 to +26 mm. of mercury. In two patients with low foot blood pressures as compared with brachial pressure, the discrepancy was related to transient states of cold and peripheral vascular disease. Measurement of foot blood pressures can be useful in patients whose arms are being used for intravenous therapy and during surgery when access to brachial pulse may be limited. The only disadvantage is the failure to obtain Korotkoff sounds in 10 per cent of the patients in this series. (*Lond, M. B.: Measurement of Blood-Pressure in the Leg, Lancet 7487: 466 (March) 1967.*)

ARTERIAL PUNCTURE The complications from 3,193 mechanical entries into an artery were reviewed. Techniques of arterial entry employed were percutaneous needle puncture (Group A), percutaneous catheterization (Group B), and cut down arteriotomy with repair (Group C). Complications were divided into major (those ending fatally, requiring surgical treatment, or resulting in permanent disability) and minor (causing symptoms which did not require more than 24 hours stay in the hospital and no permanent disability). The total complication rate was 13.1 per cent (2.6 major and 10.5 minor). Complications of all types were 11, 18, and 8 per cent for Group A, B, and C, respectively. Procedures involving the brachial artery resulted in an overall complication rate of 42 per cent as contrast to the 2.5 and 5 per cent rates when the radial artery and abdominal aorta were punctured. Factors increasing the risk of arterial entry include aortic insufficiency, systemic anticoagulation, arteriosclerosis, and hypertension. (*Mortensen, J. D.: Clinical Sequelae From Arterial Needle Puncture, Cannulation, and Incision, Circulation 35: 1118 (June) 1967.*)

BLOOD VISCOSITY Viscosity of blood appears to be primarily dependent upon the concentration of red blood cells in the plasma. Increased viscosity with increased fibrinogen levels is related to an increase in red cell aggregation and rouleaux formation. Thus, blood viscosity is directly proportional to both